REMARKS

The abstract and specification have been amended in order to correct grammatical and idiomatic errors contained therein. No new matter has been added.

In order to expedite the prosecution of the present application, Claims 1 and 2 have been canceled and replaced by newly presented Claim 5 which more particularly points out and distinctly claims the subject matter which Applicants regard as the invention. Claims 3 and 4 have been amended to depend on Claim 5. No new matter has been added.

Claims 1-4 have been rejected under 35 USC 103(a) as being unpatentable over Kanayama in view of at least one of Okawa, Yamamato or Yamada. Applicants respectfully traverse this ground of rejection and urge reconsideration in light of the following comments.

The presently claimed invention is directed to a sliding bearing comprising a bearing alloy layer and an overlay layer comprising a solid lubricant and a resin provided on the bearing alloy layer. The bearing alloy layer has a flat surface with a fine roughness in contact with the overlay layer and the overlay layer has a regular uneven configuration comprising spiral grooves and adjacent spiral annular projections formed along a circumferential direction of the sliding bearing. The grooves have the same shape and depth and the annular projections have the same shape and height so that the configuration of the overlay layer at each annular projection is uniform.

As discussed in the present specification, the present invention forms a regular uneven configuration on the surface of the overlay layer in order that a lubricant can be contained in the recesses or grooves of the uneven configuration to prevent the sliding bearing from attaining a high temperature during operation, thereby improving seizure resistance. Due to the bearing alloy layer being machined to have a flat surface with a fine roughness, the overlay layer

has a uniform cross-sectional configuration at all convex areas in the uneven configuration so that the stress applied from the rotary shaft to the individual convex areas is uniform, which allows all of the convex areas to be subject to a uniform plastic deformation and thereby improve the fitting property response of the sliding bearing.

Figure 2 in the present specification shows the results obtained with the rotary load testing machine for the seizure resistance of a sliding bearing according to the present invention and a sliding bearing according to the prior art. The tests were performed under identical conditions and, as shown in Figure 2, the temperature of the sliding bearing of the prior art exceeded 180°C during operation while that of the present invention was approximately 177°C. Additionally, Figure 3 shows the results of the determination of the fitting property response of the sliding bearing according to the present invention and that of the prior art. As shown in Figure 3, with the prior art sliding bearing, the peak in the coefficient friction rises faster as the peripheral speed is decreased while with the sliding bearing according to the present invention, the rise in the coefficient friction is not as high. These properties clearly are unexpected and further patentably distinguishes the presently claimed invention over the prior art cited by the Examiner.

The Kanayama reference discloses a sliding bearing having an excellent initial conformability and seizure resistance which comprises a resin coating layer comprising a thermosetting resin and a solid lubricant formed on a bearing alloy layer. As admitted by the Examiner, this reference does not disclose the overlay layer having a regular uneven configuration made up of grooves and adjacent projections with the grooves having the same shape and depth and the annular projections having the same shape and height. Therefore, the secondary references cited by the Examiner must provide the motivation to one of ordinary skill in the art to modify Kanayama in a manner that would yield the presently claimed

invention. It is respectfully submitted that the secondary references contain no such disclosures.

Okawa, Yamamato and Yamada have been cited by the Examiner as disclosing bearings having a pattern of grooves. However, the Okawa reference discloses that minute crater-shaped recesses 4 are formed on the surface of an overlay layer 3 by shot-blasting. Due to the minute recesses 4 being formed by shot-blasting, the uneven configuration on the surface of the overlay layer 3 is irregular. Yamamato discloses that a bearing metal layer 2 is provided on a back metal 1 and that lattice-shaped grooves 5 are provided in the bearing metal layer 2 deep enough to expose the back metal 1. This reference has no disclosure with respect to the claimed configuration of grooves and adjacent annular projections or the overlay layer containing a resin and a solid lubricant. The Yamada reference discloses a sliding bearing comprising a bearing alloy layer 2 provided with a zig-zag groove in the circumferential direction and an overlay layer 4 provided on the bearing alloy layer. In this reference, an uneven configuration, groove "a", is formed on the bearing alloy layer 2, which is a base, and the uneven configuration is formed on the overlay layer 4 in the same manner as the uneven configuration is formed on the bearing alloy layer 2. Since Kanayama and the present invention requires that the bearing alloy layer have a flat surface, this reference clearly would not motivate one of ordinary skill in the art to modify the Kanayama reference in a manner that would yield the presently claimed invention. Therefore, Applicants respectfully submit that the references cited by the Examiner do not even present a showing of prima facie obviousness under 35 USC 103(a) and, even if a proper showing of prima facie obviousness was made, the objective test data contained in the present specification would be more than sufficient to overcome it.

Reconsideration of the present application and the passing of it to issue is respectfully solicited.

Respectfully submitted,

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